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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/591,802

05/18/2007

Katsuo Shibahara

2006-1483A

4752

513 7590 10/27/2009

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EXAMINER

CHARLES, MARCUS

ART UNIT

PAPER NUMBER

3656

MAIL DATE

DELIVERY MODE

10/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,802	Applicant(s) SHIBAHARA ET AL.	
	Examiner Marcus Charles	Art Unit 3656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12-12-2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is the first action relating to serial application number 10/591,802 filed 5/18/2007. Claims 1-19 are currently pending.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The examiner has accepted the drawing filed with this application as formal drawing.

Specification

Abstract

3. The abstract of the disclosure is objected to because the term disc hub in line 3 should be --disk hub-- and in line 6, the term "dischub (3)" should be --disc hub (3)-- Correction is required. See MPEP § 608.01(b).
4. The disclosure is objected to because of the following informalities: in paragraph [0044], line 7, the reference character "3" should be --2-- subsequent to "shaft member". Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1-11 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP (2003-262217) in view of Shimpuku et al. (5,750,616) and Yasuda (20030164653). JP (2003-262217) discloses a fluid dynamic bearing device comprising a stationary (6), a rotary member (2/2b) member, a radial bearing portion for retaining the rotating member in a radial direction in a non-contact fashion by dynamic pressure action of a fluid generated in a radial bearing gap (see area about 9/18a/20a); and a thrust bearing portion (see 28) for retaining the rotating member and stationary member in a thrust direction in a non-contact manner by dynamic pressure action of the fluid generated in a thrust bearing gap between the rotating member and stationary member. JP (2003-262217) fails to disclose at least portions of stationary and the rotating member facing the thrust bearing gap are all formed of resin such that the resin portion is blended with fibers in an amount of 1-12 μm as a filler. Yasuda discloses a fluid bearing comprising a rotating member (11c) which is molded of resin (para. [0046]), and resin, and a housing 13b/14) of a resin material (para. [0049]) for resisting shock. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the rotating member and stationary member of JP (2003-262217) so that at least a portion of each is formed of a resin material in view Yasuda in order to resist shock, reduce weight and to reduce height due to friction. In addition, the combination of JP (2003-262217) and Yasuda fail to disclose the resin is blended with reinforced fiber of 1-12 μm as a filler. Shimpuku et al. discloses a fiber reinforced resin material, wherein the fiber has a diameter of 3-21 μm (which includes portion of the claimed ranged).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the composition of the fiber and resin so that the range of the diameter fiber falls within the range as disclose Shimpuku et al. in order to improved mechanical strength such as tensile strength, and wear due to friction.

In claim 10, the claimed invention is inherently included in the combination of JP (2003-262217), Shimpuku et al. and Yasuda device.

In claim 9, note, JP (2003-262217), the shaft has a flange portion (24).

In claim 11, JP (2003-262217) discloses the claimed invention.

In claim 16, JP (2003-262217 discloses the claimed invention in figs. 1, 2 and 5.

Regarding claims 2, 4 and 17-18, the combination of JP (2003-262217), of Shimpuku et al. and Yasuda fails to disclose the fiber amount of fiber by vol% in the composition. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the composition of the resin and fiber so that the fiber filler is blended in the resin in an about of 5-20 v%, and 30 vol% as claimed, since it has been held that where the general conditions of a claim is disclosed in the prior art, discovering the optimum ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claims 3, 5-6, 7 and 8, the combination above fail to disclose the filler contain an electrical conductive agent, the fibers are PAN-base carbon fibers, the thrust bearing gap is formed of LCP and the resin is formed of PPS. It would have been obvious to one of ordinary skill to select a different resin

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material for the thrust surfaces and to include the electrical conductive agent, the LCP, the PAN base carbon and the resin is formed of PPS as claimed since these materials are well known and are available, and one of ordinary skill in the art would select these materials, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

7. Claims 12-15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP (2003-262217) in view of Fujinaka (6,832,853). JP (2003-262217) discloses the claimed invention above except for the housing including the thrust bearing surface and formed of resin, and a portion including a fixation formed of a metal material. Fujinaka discloses a fluid bearing comprising a housing (24) made from a resin material, and including a fixation surface (25) that is made from a pressed plated steel in order to reduce cost. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the housing of JP (2003-262217) so that it is made from a resin material and includes a fixation formed of metal in view of Fujinaka in order to reduce weight and cost of manufacturing.

In claim 13, the claimed invention is inherently included during the manufacturing of JP (2003-262217) and Fujinaka device.

In claim 14, JP (2003-262217) discloses the claimed invention (see figs. 1, 3 and 5).

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In claim 15, note JP (2003-262217) the thrust bearing (24) at the bottom section housing.

In claim 19, JP (2003-262217) discloses the claimed invention in figs. 1, 2 and 5.

Citation

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Note the prior art cited in attached PTO Form 892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus Charles whose telephone number is (571) 272-7101. The examiner can normally be reached on Monday-Thursday 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ridley Richard can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marcus Charles

/Marcus Charles/

Primary Examiner, Art Unit 3656